UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,092	03/08/2001	Thomas J. Cloonan	7012	4937

21924 7590 08/25/2006	EXAMINER
ARRIS INTERNATIONAL, INC 3871 LAKEFIELD DRIVE SUWANEE, GA 30024	MANNING, JOHN

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/802,092	CLOONAN ET AL.
	Examiner	Art Unit	
	John Manning	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-18_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, filed 5/11/2006, with respect to the rejection(s) of claim(s)

1 and 10 under 102(e) have been fully considered and are persuasive. Therefore, the

rejection has been withdrawn. However, upon further consideration, a new ground(s) of

rejection is made in view of Johnson et al. (US Pat No 6,985,963) and Rai et al. (US Pat

No 6,438,110).

Applicant's arguments with respect to claims 2- 9 and 11-18 have been

considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over

Johnson et al. (US Pat No 6,985,963) in view of Rai et al. (US Pat No 6,438,110).

In regard to claim 1 and 10, Johnson discloses a method and system of

connecting an end-user of a cable television network to an Internet service provider

(ISP). The claimed step of "receiving a request for bandwidth on a cable data system

link for a first ISP wherein the request is initiated by a requesting subscriber" is met by

Figure 1. Johnson discloses the end-user connecting to the ISP through the backbone

network. The end-user informs the headend of the ISP that is associated with (COL 4,

Lines 25-35). This is a request for a link to an ISP. A request for a link is a request of

bandwidth. Johnson discloses bandwidth accounting, where the ISP has a determined

maximum amount of bandwidth, which meets the claimed steps of "determining

available bandwidth on said cable data system link" and "determining available

bandwidth on the cable data system link for the first ISP" (See Col 9, Line 22 – Col 10,

Lines 5). However, Johnson is silent with respect to the claimed steps of "comparing

available bandwidth for said first ISP with the amount of requested bandwidth" and

"granting or denying cable data service to the new subscriber based upon the

determination of whether the available bandwidth is greater than, less than or equal to

the bandwidth to be allocated to the new subscriber". Rai teaches "comparing available

bandwidth for said first ISP with the amount of requested bandwidth" and "granting or

denying cable data service to the new subscriber based upon the determination of

whether the available bandwidth is greater than, less than or equal to the bandwidth to

be allocated to the new subscriber" (Col 12, Line 62 – Col 13, Line 65) so as to "to

ensure that the network links have the necessary bitrate capacities to cope with

transferring data without corrupting it" (Col 2, Lines 3-5).

4.   Claims 2-4, 11 and 13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Johnson et al. in view of Vogel (US Pat No 6,742,187).

In regard to claim 2, 4, 11 and 13, the combination of Johnson and Rai are silent on transferring the subscriber to a different data channel with more available capacity when the requested channel is less than the bandwidth to be allocated where the bandwidth is determined before the transfer. Vogel teaches transferring a subscriber to a different channel with a greater channel capacity when the available capacity on a channel degrades (and thereby is less than the bandwidth requested). "As noted earlier in this document, when impairments in the upstream channel from the cable modem to CMTS exist, cable modem systems provide for the ability to change the upstream channel in which a given cable modem uses to transmit. However, prior art methods involving the Upstream Channel Change (UCC) message exchange are not deterministic, that is, the time required for the change cannot be known in advance, therefore this method of operation is inadequate for voice applications, such as Voice over Internet Protocol (VoIP) applications, Internet telephony, Internet video on demand, or other time critical services, where service can be lost by such delays or degraded below service quality objectives. In addition, because of the potentially long time associated with the UCC message exchange, dynamic load balancing becomes inefficient" (Col 13, Lines 10-25). Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Johnson and Rai with switching to a different channel when the available capacity is less than the bandwidth requested where the bandwidth is determined before the transfer so as to reduce delay in channels and efficiently provide dynamic load balancing in the upstream direction.

In regard to claim 3, the combination of Johnson and Rai are silent on randomly transferring the subscriber to a different cable data system link where the bandwidth is less than or equal to the bandwidth to be allocated to the new user. Vogel teaches transferring a subscriber to a different channel with a greater channel capacity when the available capacity on a channel degrades (and thereby is less than the bandwidth requested). The transferring of a subscriber is random because the degradation of a channel is random (See Col 13, Lines 10-25 and Col 3, Lines 10-16). Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Johnson and Rai with switching to a different channel based on a random event so as to reduce delay in channels and efficiently provide dynamic load balancing in the upstream direction.

5.   Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. in view of Allen (US Pat No 6,850,965).

The examiner notes that U.S. Patent 6,850,965 is a continuation-in-part of U.S. Application No. 09/344,688 support for the Co. 23, Lines 18-57 of the patent can be found in application 09/344,688 (specifically on pages 18-20).

In regard to claims 5 and 14, the combination of Johnson and Rai teaches denying service if the available bandwidth on a requested channel is less than the bandwidth being allocated. The combination of Johnson and Rai fails to teach granting service if the available bandwidth on a requested channel is less than the bandwidth

being allocated. Allen teaches granting services when the bandwidth on the requested

channel is less than the bandwidth being allocated but greater than the sums of the

minimum flow rates on the channel (Col. 23, Lines 18-40). Consequently, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to

modify the combination of Johnson and Rai by granting service if the available

bandwidth on a requested channel is less than the bandwidth being allocated as taught

by Allen in order to maximizing charges thereby increasing profits by using the reserve

bandwidth (Col. 23, Lines 48-57).

6.   Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Johnson et al. in view of Allen and further in view of Ito et al. (US Pat

No 6,014,693).

In regard to claims 6, 7, 15 and 16, the combination of Johnson, Rai and Allen

teach allocation schemes but are silent on losing packets when a channel is

oversubscribed and when the packets are randomly lost. Ito teaches in a congested

network (e.g. oversubscribed) that it is common to randomly loose packets in order to

effectively adjust the transmission rates to reduce the demand on a network with a high

load (Col 5, Lines 29-44). Consequently, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify combination of Johnson, Rai

and Allen by randomly losing packets in a congested network as taught by Yao in order

to effectively adjust the transmission rates to reduce the demand on a network with a

high load (Col 3, Lines 12-20).

7.   Claim 6, 8-9, 15, and 17-18 rejected under 35 U.S.C. 103(a) as being

unpatentable over Johnson et al. in view of Allen and further in view of Selinger (US Pat

No 6,345,038).

        In regard to claims 6, 8, 15, and 17, the combination of Johnson, Rai and Allen

teach allocation schemes but are silent on losing packets when a channel is

oversubscribed and when the packets are based on levels of service, where higher

levels of service lose less packets. Selinger teaches priority ordered queues (Col 7,

Lines 51-63), which give a priority to packets having higher levels of Quality of Service

(QoS), thereby when a channel is oversubscribed the higher levels of service drop less

packets (Col 1, Lines 49-63). Consequently, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the combination of

Johnson, Rai and Allen by losing packets are based on levels of service, where higher

levels of service lose less packets as taught by Selinger in order to guarantee

subscribers a level of service during heavy congestion, thereby enabling users to pay

for the type of service that they would like to receive.

        In regard to claims 9 and 18, the combination of Johnson, Rai and Allen is silent

on granting service to a requesting service reserved for a second ISP. Selinger teaches

granting service to a requesting service reserved for a second ISP so as to provide a

priority based bandwidth management system. Consequently, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

the combination of Johnson, Rai and Allen by granting service to a requesting service

reserved for a second ISP for the stated advantage.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

      A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to John Manning whose telephone number is 571-272-

7352. The examiner can normally be reached on M-F: 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JM
August 15, 2006

JOHN MILLER
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